FIG.1

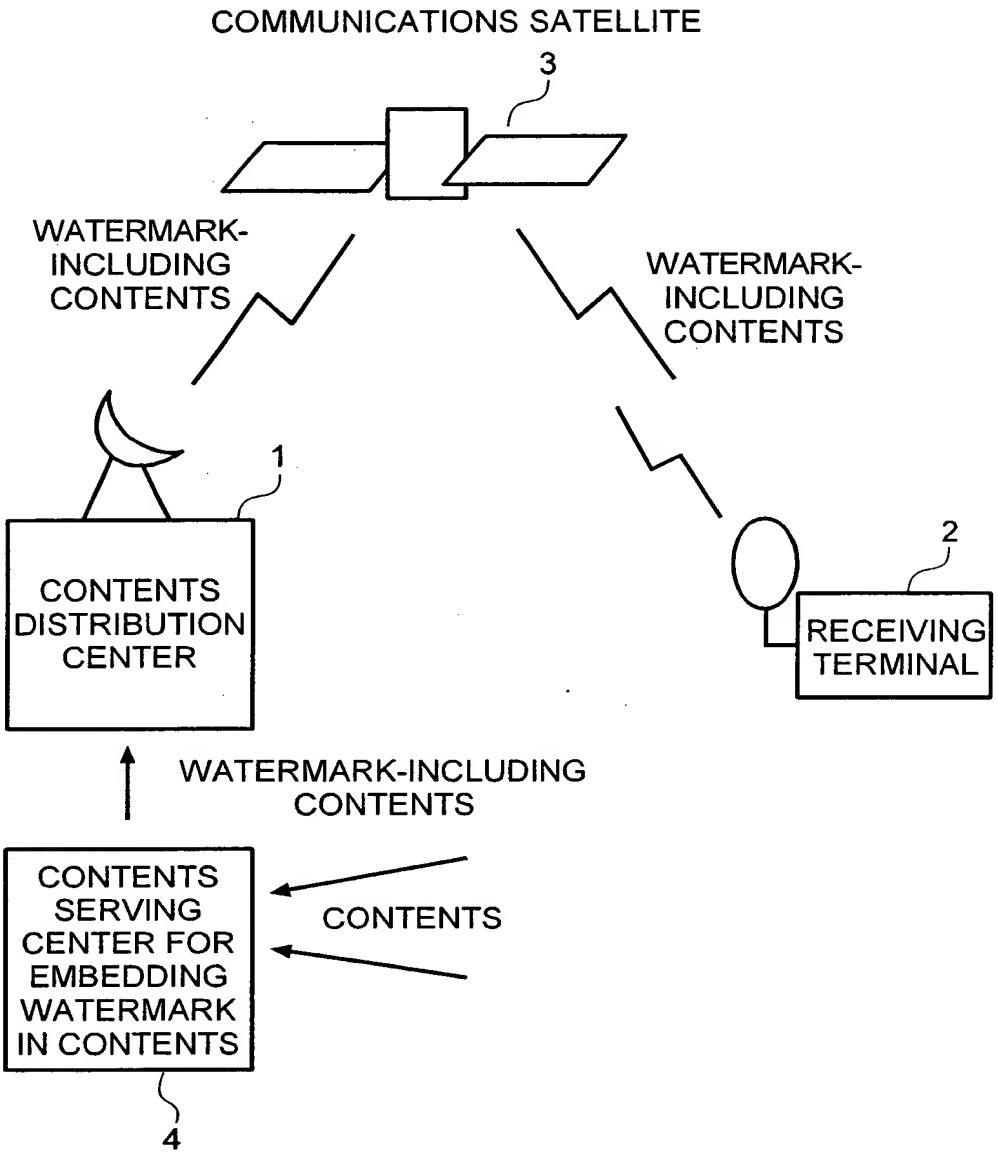

COMMUNICATIONS SATELLITE
3
WATERMARK-INCLUDING CONTENTS
WATERMARK-INCLUDING CONTENTS
1
2
CONTENTS DISTRIBUTION CENTER
RECEIVING TERMINAL
WATERMARK-INCLUDING CONTENTS
CONTENTS SERVING CENTER FOR EMBEDDING WATERMARK IN CONTENTS
CONTENTS
4

FIG.2

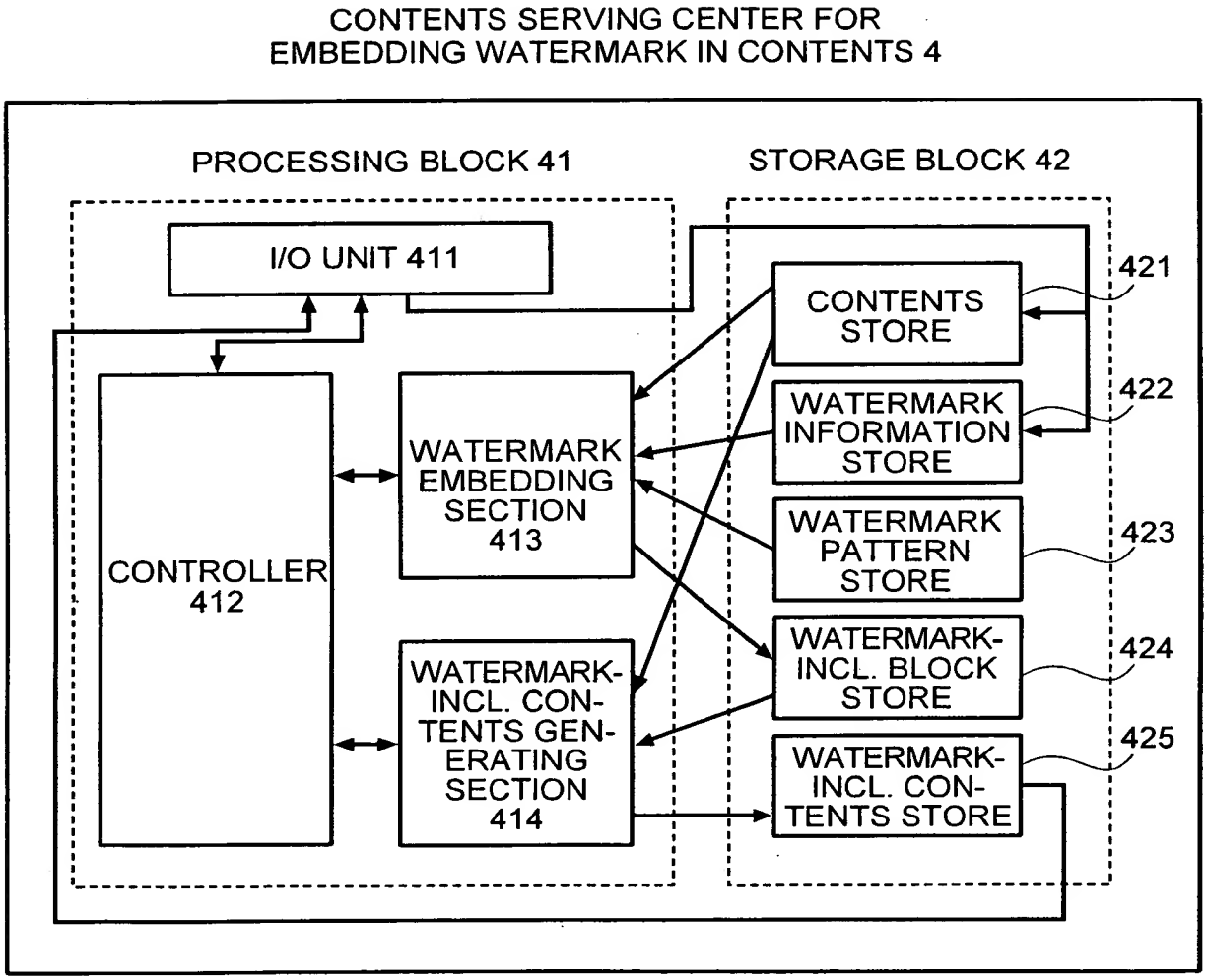

CONTENTS SERVING CENTER FOR EMBEDDING WATERMARK IN CONTENTS 4
PROCESSING BLOCK 41
STORAGE BLOCK 42
I/O UNIT 411
CONTROLLER 412
WATERMARK EMBEDDING SECTION 413
WATERMARK-INCL. CONTENTS GENERATING SECTION 414
CONTENTS STORE
421
WATERMARK INFORMATION STORE
422
WATERMARK PATTERN STORE
423
WATERMARK-INCL. BLOCK STORE
424
WATERMARK-INCL. CONTENTS STORE
425

FIG.3

CONTENTS SERVING CENTER FOR EMBEDDING WATERMARK IN CONTENTS 4

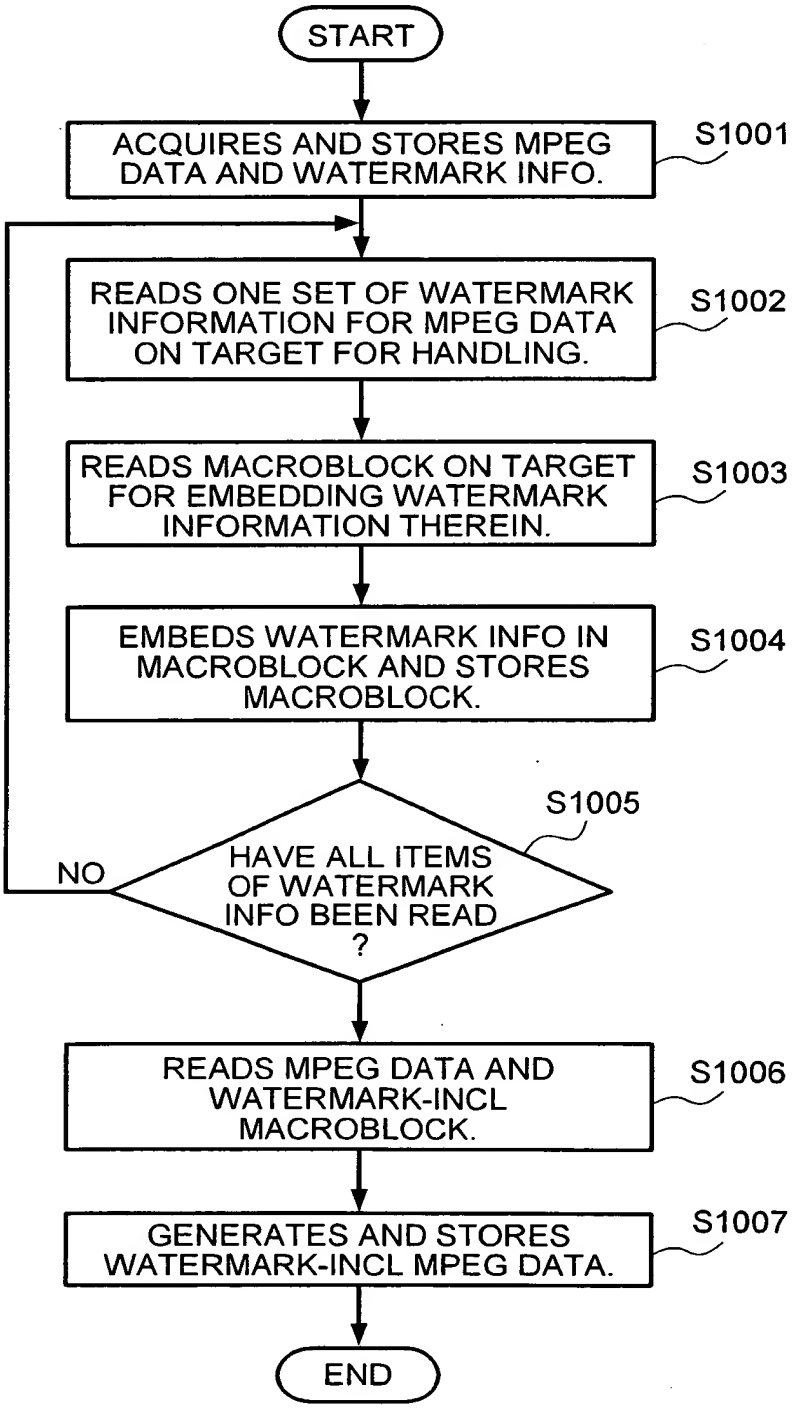


FIG.4

WATERMARK INFORMATION STORE 422

4221 Contents No.	4222 Macro block No.	4223 Control info	4224 Level info
No. *****	No. ******	Smoothing	User level: Underage
	No. ******	Smoothing	User level: Underage
	No. ******	Smoothing	Region level: country A
		Mosaic	Region level: country B
		Solid black	Region level: country C
	No. ******	Smoothing	Distributor level: Public
	No. ******	Smoothing	Distributor level: Public
No. ****	No. ***	Mosaic	User level: Student
	No. ***	Mosaic	User level: Student
	No. ***	Mosaic	User level: Student
	⋮		

FIG.5

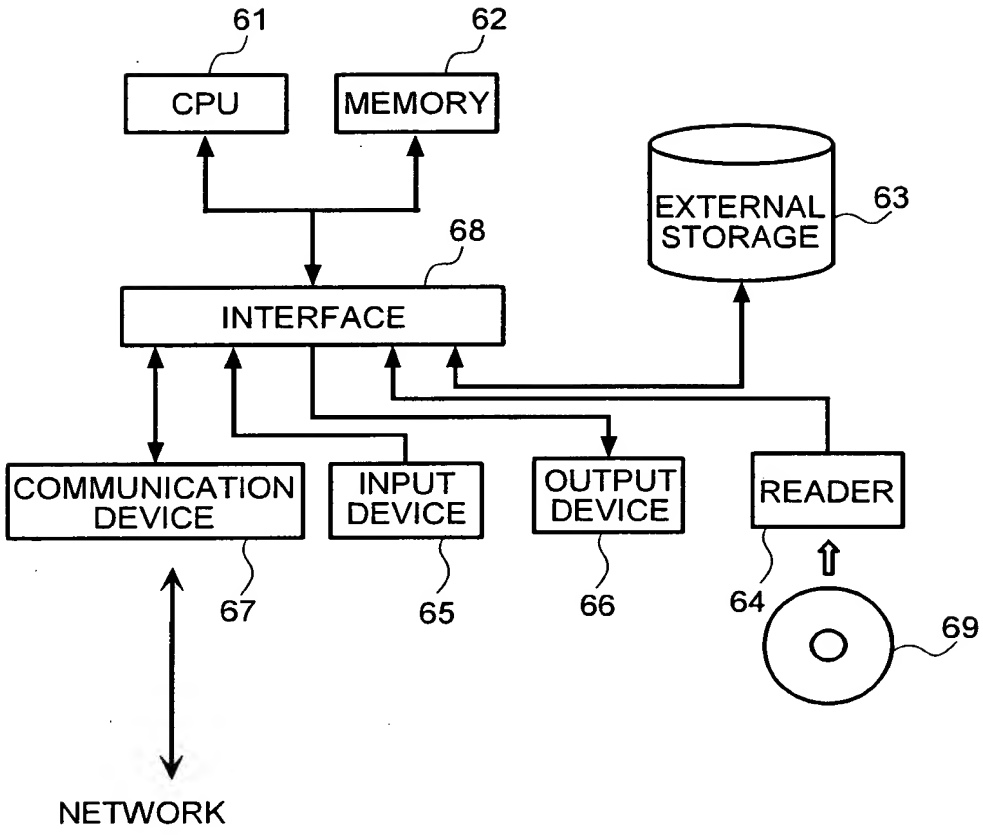

61
62
CPU
MEMORY
EXTERNAL STORAGE
63
68
INTERFACE
COMMUNICATION DEVICE
INPUT DEVICE
OUTPUT DEVICE
READER
67
65
66
64
69
NETWORK

FIG.6

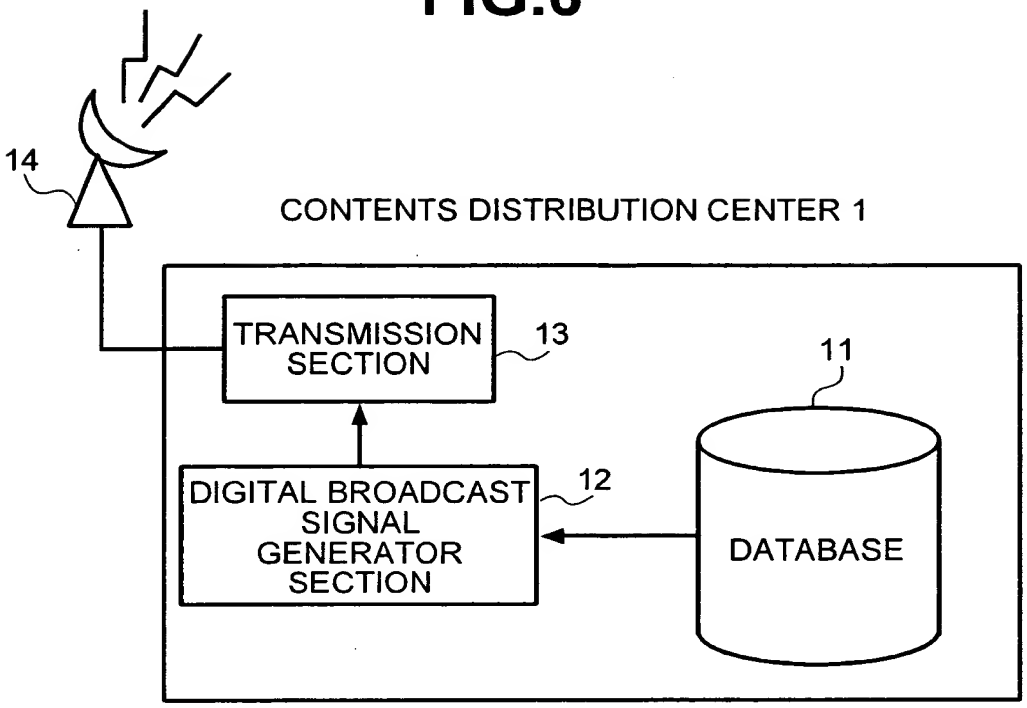

14
CONTENTS DISTRIBUTION CENTER 1
TRANSMISSION SECTION
13
11
DIGITAL BROADCAST SIGNAL GENERATOR SECTION
12
DATABASE

FIG.7

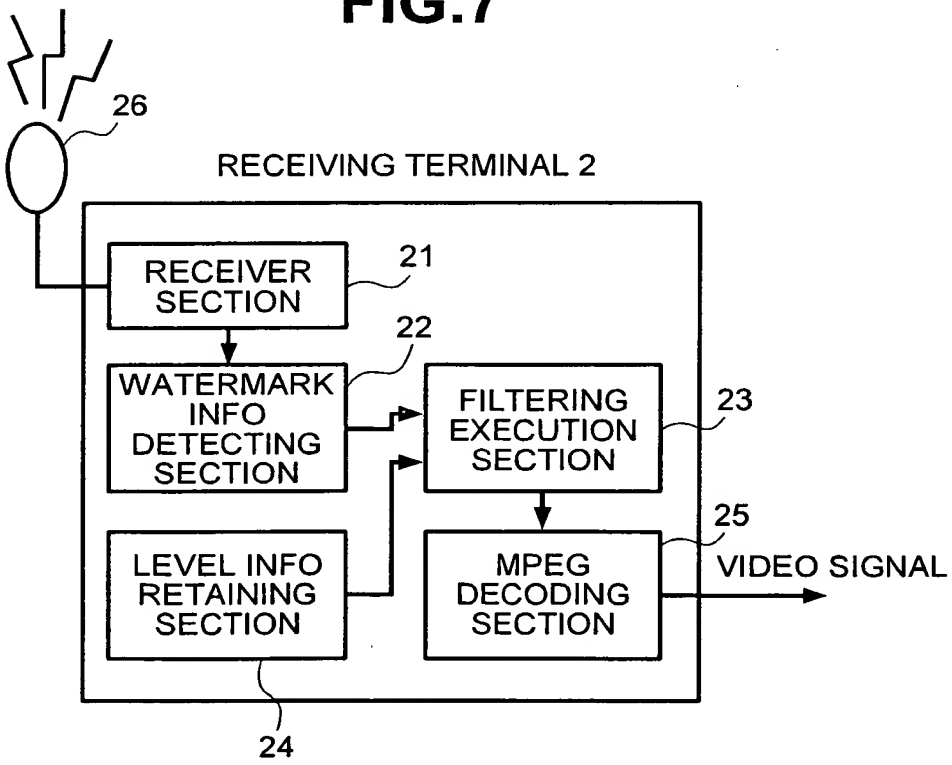

26
RECEIVING TERMINAL 2
RECEIVER SECTION
21
22
WATERMARK INFO DETECTING SECTION
FILTERING EXECUTION SECTION
23
25
LEVEL INFO RETAINING SECTION
MPEG DECODING SECTION
VIDEO SIGNAL
24

FIG.8

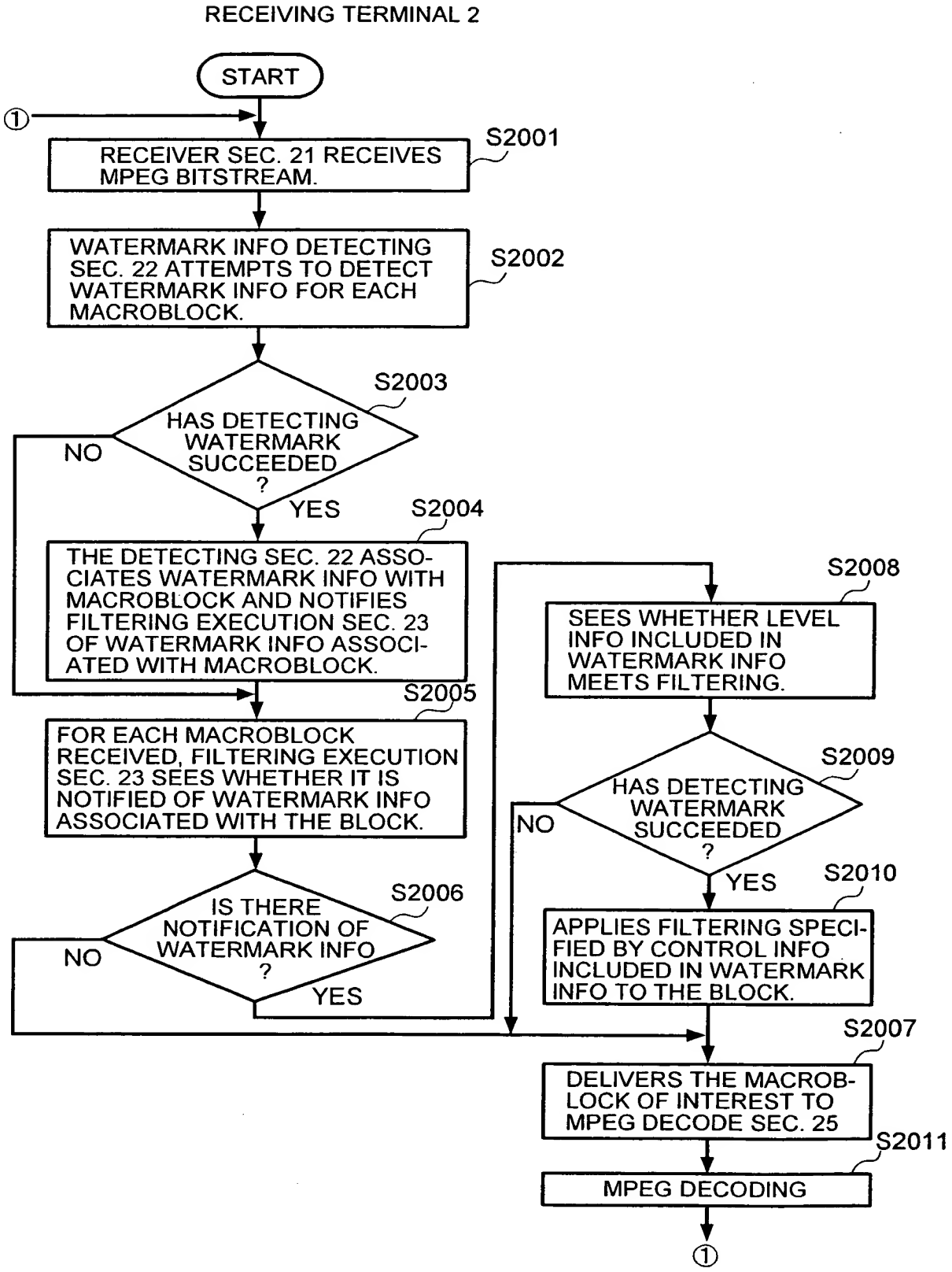

RECEIVING TERMINAL 2
START
①
RECEIVER SEC. 21 RECEIVES MPEG BITSTREAM.
S2001
WATERMARK INFO DETECTING SEC. 22 ATTEMPTS TO DETECT WATERMARK INFO FOR EACH MACROBLOCK.
S2002
HAS DETECTING WATERMARK SUCCEEDED ?
S2003
NO
YES
THE DETECTING SEC. 22 ASSOCIATES WATERMARK INFO WITH MACROBLOCK AND NOTIFIES FILTERING EXECUTION SEC. 23 OF WATERMARK INFO ASSOCIATED WITH MACROBLOCK.
S2004
FOR EACH MACROBLOCK RECEIVED, FILTERING EXECUTION SEC. 23 SEES WHETHER IT IS NOTIFIED OF WATERMARK INFO ASSOCIATED WITH THE BLOCK.
S2005
IS THERE NOTIFICATION OF WATERMARK INFO ?
S2006
NO
YES
SEES WHETHER LEVEL INFO INCLUDED IN WATERMARK INFO MEETS FILTERING.
S2008
HAS DETECTING WATERMARK SUCCEEDED ?
S2009
NO
YES
APPLIES FILTERING SPECIFIED BY CONTROL INFO INCLUDED IN WATERMARK INFO TO THE BLOCK.
S2010
DELIVERS THE MACROBLOCK OF INTEREST TO MPEG DECODE SEC. 25
S2007
MPEG DECODING
S2011
①

FIG.9

LEVEL INFORMATION RETAINING SECTION 24

2411	Contents user ID	*********
2412	Age of user	Underage
2413	Social position of user	Student
2414	Region on target of marketing	Japan
2415	Contents distributor ID	*****

FIG.10

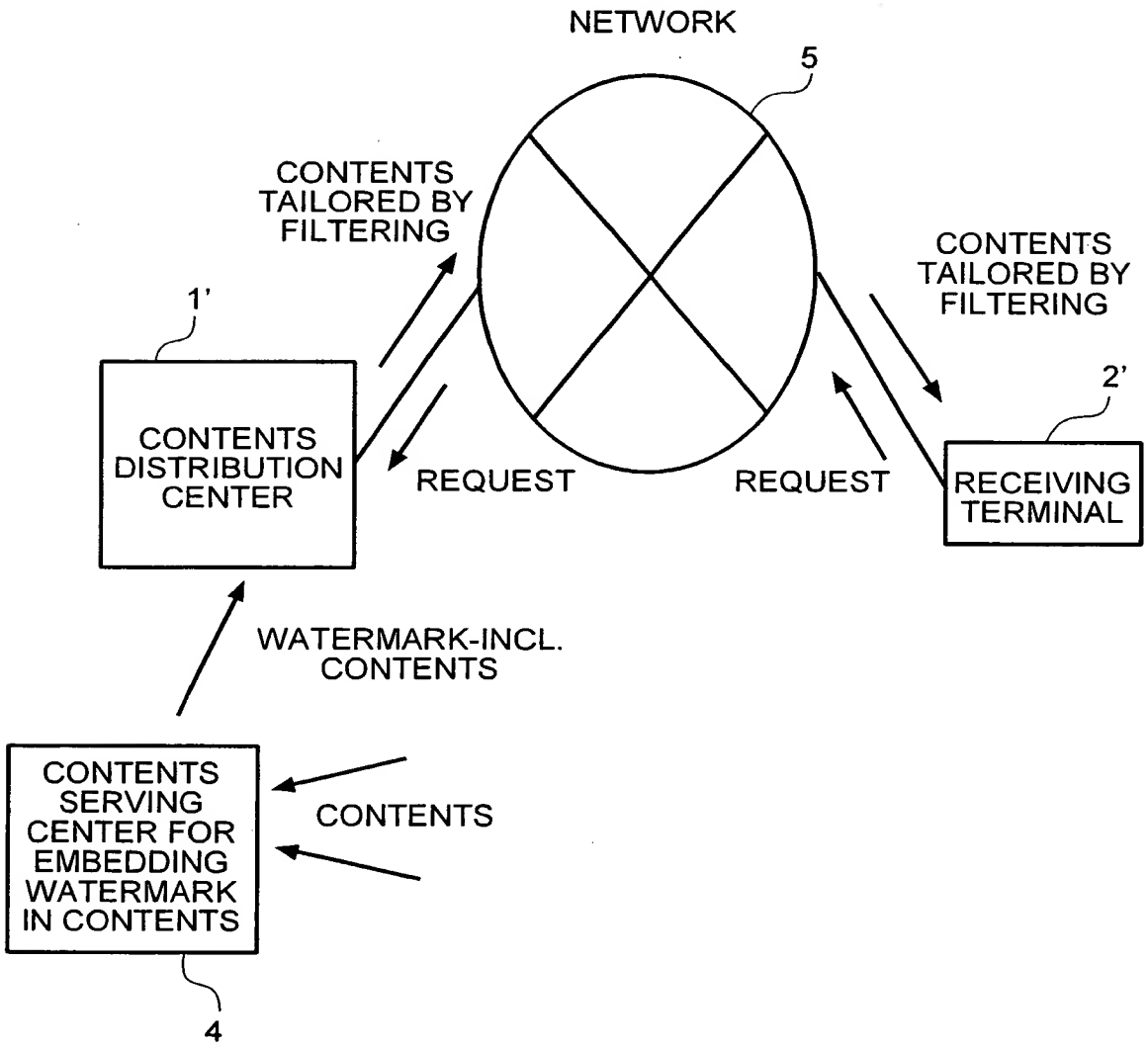

NETWORK
5
CONTENTS TAILORED BY FILTERING
CONTENTS TAILORED BY FILTERING
1'
2'
CONTENTS DISTRIBUTION CENTER
REQUEST
REQUEST
RECEIVING TERMINAL
WATERMARK-INCL. CONTENTS
CONTENTS SERVING CENTER FOR EMBEDDING WATERMARK IN CONTENTS
CONTENTS
4

FIG.11

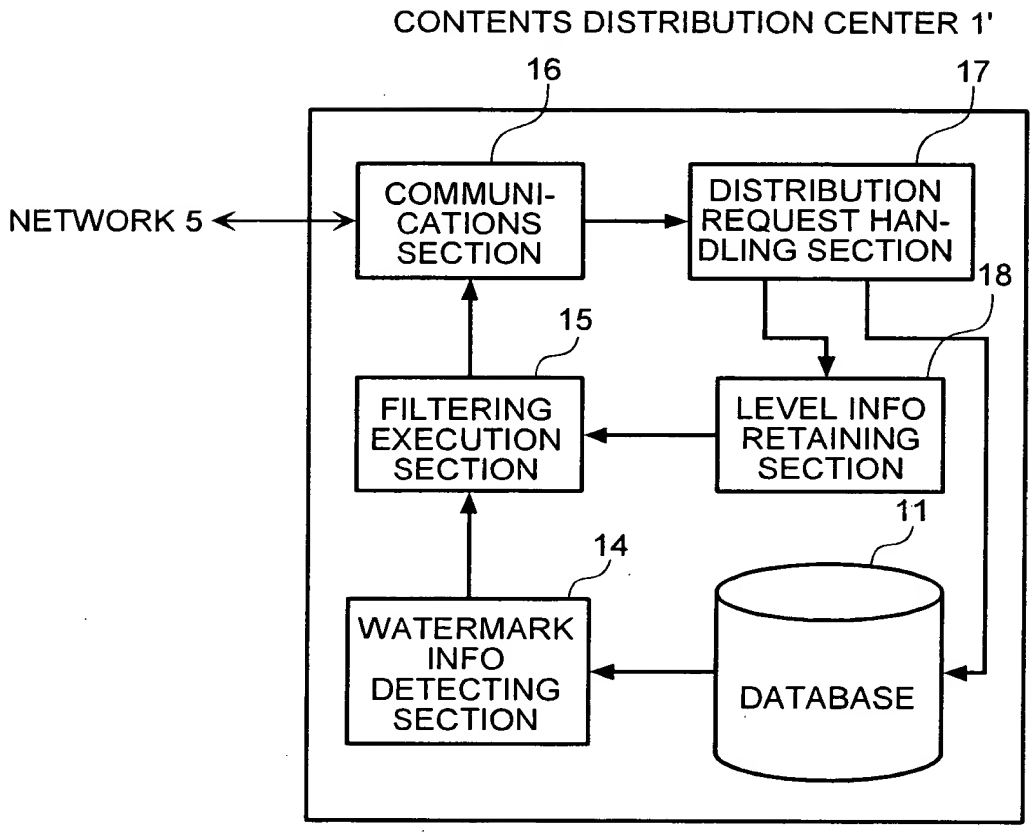

CONTENTS DISTRIBUTION CENTER 1'
16
17
NETWORK 5
COMMUNI-CATIONS SECTION
DISTRIBUTION REQUEST HAN-DLING SECTION
18
15
FILTERING EXECUTION SECTION
LEVEL INFO RETAINING SECTION
11
14
WATERMARK INFO DETECTING SECTION
DATABASE

FIG.12

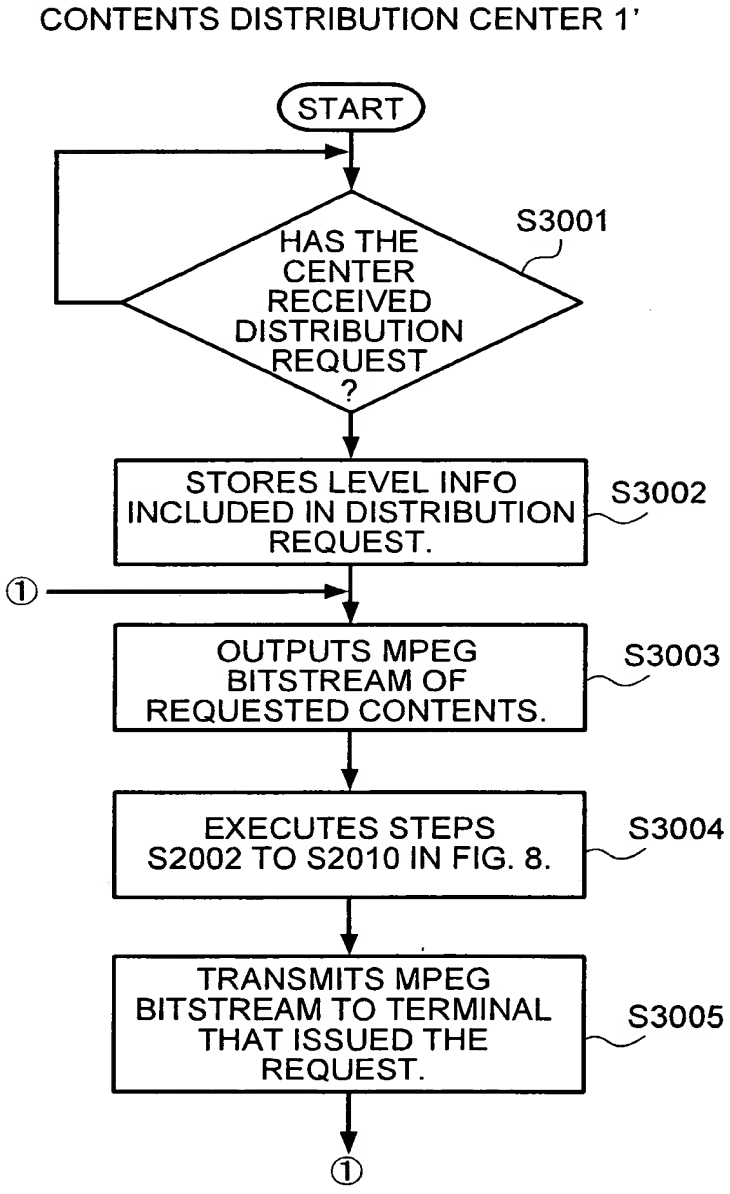
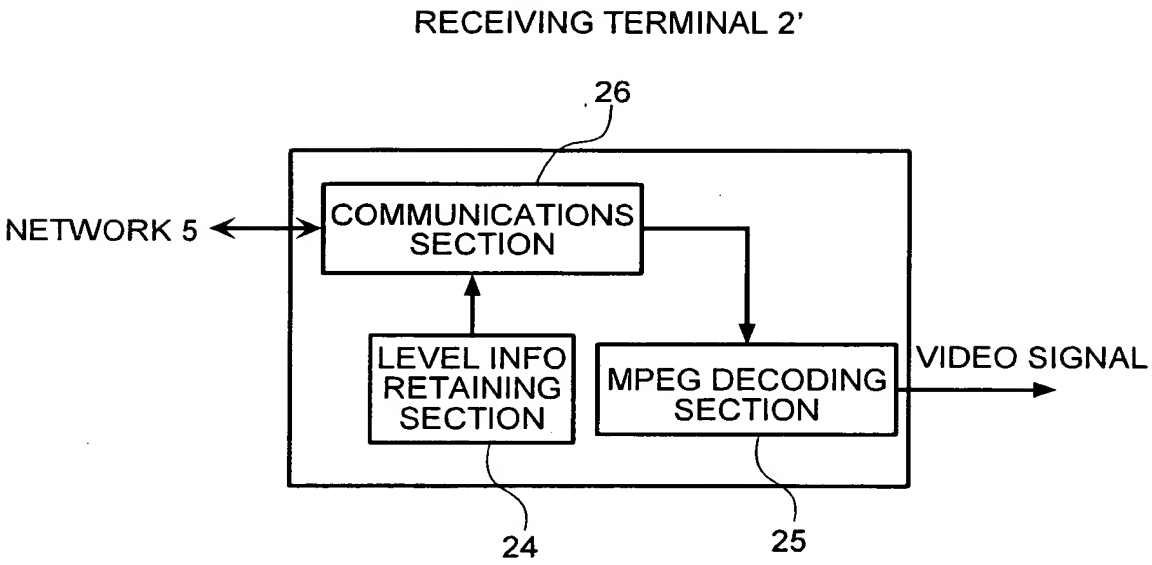

CONTENTS DISTRIBUTION CENTER 1'
START
HAS THE CENTER RECEIVED DISTRIBUTION REQUEST ?
S3001
STORES LEVEL INFO INCLUDED IN DISTRIBUTION REQUEST.
S3002
①
OUTPUTS MPEG BITSTREAM OF REQUESTED CONTENTS.
S3003
EXECUTES STEPS S2002 TO S2010 IN FIG. 8.
S3004
TRANSMITS MPEG BITSTREAM TO TERMINAL THAT ISSUED THE REQUEST.
S3005
①

FIG.13


RECEIVING TERMINAL 2'
26
NETWORK 5
COMMUNICATIONS SECTION
LEVEL INFO RETAINING SECTION
MPEG DECODING SECTION
VIDEO SIGNAL
24
25